

Listing of the claims:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Previously Presented) A vibration exciter for soil compacting devices, comprising:

imbalance shafts that stand parallel to or coaxial with one another and that can be driven in opposite directions with the same rotational speed, each of the imbalance shafts bearing an imbalance mass attached to it in stationary fashion relative to the shaft and an imbalance mass that can be moved in a rotational fashion relative to the shaft, and each of the imbalance shafts having allocated to it an adjustment device for individually adjusting a position of each respective movable imbalance mass relative to the imbalance shaft that bears it,

wherein, during operation, the relative positions of the movable imbalance masses can be adjusted using the adjustment device in such a way that the centrifugal forces produced by the imbalance masses during the rotation of the imbalance shafts cancel each other out as a whole in each rotational position of the imbalance shafts,

wherein, during operation, a change of the relative positions of the movable imbalance masses can be executed in such a way that the magnitude of an overall centrifugal force resulting from rotation the imbalance masses is proportional to a speed of forward or backward motion of the soil compacting device wherein to effect forward movement of the soil compacting device, the movable imbalance masses are rotated 90 degrees with respect to the imbalance shaft, wherein

to bring the compacting device to a standstill, the movable imbalance masses are rotated 180 degrees with respect to the imbalance shaft, and wherein

to effect backward motion of the soil compacting device, the movable imbalance mass is rotated in a direction opposite that of the direction of rotation the movable imbalance mass used to effect forward movement and by 90 degrees with respect to the imbalance shaft.

2. (Previously Presented) A vibration exciter according to Claim 1, wherein the relative position of each movable imbalance mass on the associated imbalance shaft can be adjusted in such a way that the centrifugal forces of the imbalance masses on each individual imbalance shaft cancel each other out in each rotational position of the imbalance shaft.

3. (Previously Presented) A vibration exciter according to Claim 1, wherein, in order to effect a forward motion of the soil compacting device in a horizontal first direction, the relative positions of the movable imbalance masses are capable of being modified in such a way that the centrifugal forces of the imbalance masses do not cancel one another but, instead, generate an overall centrifugal force having a horizontal component.

4. (Previously Presented) A vibration exciter according to Claim 3, wherein, during a transition between forward and backward motion, the centrifugal forces of the imbalance masses cancel each other out as a whole.

5. (Previously Presented) A vibration exciter according to Claim 1, wherein the change of the relative positions of the movable imbalance masses can be executed continuously.

6. (Previously Presented) A vibration exciter according to Claim 1, wherein the imbalance shafts are coupled with one another positively so as to be capable of rotation in opposite directions.

7. (Previously Presented) A vibration exciter according to Claim 1, wherein phase positions of the imbalance shafts relative to one another cannot be modified, despite each movable imbalance mass being movable relative to the imbalance shaft that bears it.

8. (Previously Presented) A vibration exciter according to Claim 1, wherein the adjustment of the relative positions of the movable imbalance masses on the imbalance shafts can be executed synchronously using the adjustment means.

9. (Previously Presented) A vibration exciter according to Claim 1, wherein the adjustment means can be actuated electrically, hydraulically, pneumatically, or mechanically.

10. (Previously Presented) A vibration exciter according to Claim 1, wherein at least one part of the imbalance masses is formed from a plurality of imbalance elements

11. (Currently Amended) A vibration exciter for soil compacting devices, comprising:

first and second imbalance shafts that are one of parallel and coaxial to one another and that are driven in opposite directions with the same rotational speed, each of the imbalance shafts bearing an imbalance shaft that is stationary with respect to the associated imbalance shaft and an imbalance mass that is rotatable with respect to the associated imbalance shaft, and

adjustment means, allotted to ~~each of~~ the imbalance shafts, for individually rotationally adjusting a position of ~~the each~~ respective movable imbalance mass relative to the associated imbalance shaft, wherein the adjustment means selectively adjusts the positions of the movable imbalance masses relative to their associated imbalance shafts so that the exciter alternatively and selectively

1) operates in a first mode to in which centrifugal forces generated by the imbalance masses during rotation of the imbalance shafts have both aggregate vertical and horizontal components, thereby propelling the exciter to move forwardly or rearwardly while imposing a compaction force for soil compaction, and

2) operates in a second mode in which the centrifugal forces produced by the imbalance masses during the rotation of the imbalance shafts at least essentially cancel each other out as a whole in each rotational position of the imbalance shafts and, therefore, have little or no aggregate horizontal or vertical components, and

wherein, when the exciter is switching between the first and second operating modes to cease machine propulsion, the adjustment means controls a change of the relative positions

~~wherein during operation, the adjustment means allotted to the imbalance shafts can adjust the positions of the movable imbalance masses relative to the imbalance shafts in such a way that the centrifugal forces produced by all of the imbalance masses during the rotation of the imbalance shafts cancel each other out as a whole in each rotational position of the imbalance shafts, and~~

~~wherein during operation, the adjustment means allotted to the imbalance shafts can adjust the positions of the movable imbalance masses relative to the imbalance shafts while the device is decelerating in such a way that the magnitude of an overall centrifugal force resulting from rotation~~

of all of the imbalance masses is proportional to a speed of forward or backward motion of the soil compacting device.

12. (Previously Presented) A vibration exciter according to Claim 11, wherein the adjustment means can be actuated electrically, hydraulically, pneumatically, or mechanically.

13. (Previously Presented) A method of operating a vibration exciter for a soil compacting device, the vibration exciter having a pair of imbalance shafts, each of the imbalance shafts having a stationary imbalance mass and a movable imbalance mass attached thereto, and an adjustment device, the method comprising:

rotating each of the pair of imbalance shafts in opposite directions with respect to the other of the pair of imbalance shafts;

actuating the adjustment device to individually adjust a position of the respective movable imbalance mass relative to the imbalance mass that bears it;

rotating the movable imbalance masses 90 degrees with respect to the imbalance shaft to effect forward movement of the soil compacting device;

rotating the movable imbalance masses 180 degrees with respect to the imbalance shaft to bring the soil compacting device to a standstill; and

rotating the movable imbalance masses in a direction opposite that of the direction for effecting forward movement and 90 degrees relative to the imbalance shaft to effect rearward movement of the soil compacting device.

14. (New) A vibration exciter according to claim 1, wherein the phases of the imbalance shafts are fixed relative to one another.

15. (New) A vibration exciter according to claim 11, wherein the phases of the first and second imbalance shafts are fixed relative to one another.

16. (New) A vibration exciter for soil compacting devices, comprising:

first and second imbalance shafts that are one of parallel and coaxial to one another and that are driven in opposite directions with the same rotational speed, each of the imbalance shafts bearing an imbalance mass that is stationary with respect to the associated imbalance shaft and an imbalance mass that is rotatable with respect to the associated imbalance shaft, and

adjustment means, allotted to the imbalance shafts, for individually rotationally adjusting a position of each respective movable imbalance mass relative to the associated imbalance shaft, wherein the adjustment means selectively adjusts the positions of the movable imbalance masses relative to their associated imbalance shafts and relative to one another so that the exciter alternatively and selectively

- 1) operates in a first mode to in which centrifugal forces generated by the imbalance masses during rotation of the imbalance shafts have both aggregate vertical and horizontal components, thereby propelling the exciter to move forwardly or rearwardly while imposing a compaction force for soil compaction, and
- 2) operates in a second mode in which the centrifugal forces produced by the imbalance masses during the rotation of the imbalance shafts at least essentially cancel each other out as a whole in each rotational position of the imbalance shafts and, therefore, have little or no aggregate horizontal or vertical components.

17. (New) A vibration exciter according to claim 16, wherein the phases of the first and second imbalance shafts are fixed relative to one another.

18. (New) A method of operating a vibration exciter for a soil compacting device, the method comprising the steps of:

driving first and second imbalance shafts that are arranged in parallel or coaxially with respect to one another in opposite directions at the same rotational speed, wherein each of the imbalance shafts bears an imbalance mass that is attached to the shaft to move with it and a movable imbalance mass that is rotatable relative to the imbalance shaft;

selectively adjusting the positions of the movable imbalance masses relative to their associated imbalance shafts such that the exciter alternatively and selectively

- 1) operates in a first mode to in which centrifugal forces generated by the imbalance masses during rotation of the imbalance shafts have both aggregate vertical and horizontal components, thereby propelling the exciter to move forwardly or rearwardly while imposing a compaction force for soil compaction, and
- 2) operates in a second mode in which the centrifugal forces produced by the imbalance masses during the rotation of the imbalance shafts at least essentially cancel each other out as a whole in each rotational position of the imbalance shafts and, therefore, have virtually no or no aggregate horizontal or vertical components.

19. (New) The method according to claim 18, wherein, when the exciter is switching between the first and second operating modes to cease machine propulsion, the relative positions of the movable imbalance masses relative to the imbalance shafts are controlled while the soil compacting device is decelerating in such a way that the magnitude of an overall centrifugal force resulting from rotation of all of the imbalance masses is proportional to a speed of forward or backward motion of the soil compacting device.

20. (New) A method according to claim 18, wherein the phases of the first and second imbalance shafts are fixed relative to one another.